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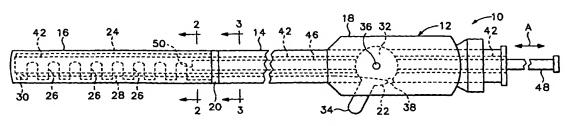
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(54) Title: VARIABLE CURVE CATHETER



(57) Abstract: Disclosed is a deflectable tip guiding device, such as a catheter (10), that enables a physician, or other health care personnel, to vary the radius of curvature of the tip of the device. In one embodiment, a guiding device (10) includes an elongate body (14) and a deflectable distal tip (16). An elongate stiffener tube (46) is coupled to the body for longitudinal movement relative thereto and has a distal end spaced a variable distance from the distal end of the tip, thereby serving as a fulcrum for the tip. Longitudinal movement of the stiffener tube (46) relative to the body varies the distance between the distal ends of the tip and tube, which in turn causes a corresponding increase or decrease in the radius of curvature of the tip.



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International application No.

PCT/US03/36210

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According to International Patent Classification (IPC) or to both national classification and IPC			
B. FIELDS SEARCHED			
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U.S.: 604/95.01 to 95.05, 524, 525, 526, 527			
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched			
none			
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)			
none			
C. DOCUMENTS CONSIDERED TO BE RELEVANT			
Category *			
Α	US 5,454,787 A (Lundquist) 03 October 1995 (03.10.1995), See figures 1-4.		
^	110 6 201 702 A (D-I -D 1) 17 I 100	05 (17 01 1005) Bar Samara 5 0	1.44
Α	US 5,381,782 A (DeLaRama, et al.) 17 January 1995 (17.01.1995), See figures 5-9.		1-44
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